

Remarks

The Office Action dated December 12, 2007 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-4, 6-8, 10-11, 13, and 15-20 are pending in this application. Claims 1-4, 6-8, 10-11, 13, and 15-20 stand rejected.

In accordance with 37 C.F.R. 1.136(a), a three month extension of time is submitted herewith to extend the due date of the response to the Office Action dated December 12, 2007, for the above-identified patent application from March 12, 2008, through and including June 12, 2008. In accordance with 37 C.F.R. 1.17(a), authorization to charge a deposit account in the amount of \$1050.00 to cover this extension of time request also is submitted herewith.

Independent Claims 1 and 13 have been amended to recite "each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams." Support for this amendment can be found in paragraphs 0024 and 0024, and in Figure 3. No new matter has been added.

The objection to the drawings under 37 CFR 1.83(a) is respectfully traversed.

Figure 8 has been canceled and all references to Figure 8 in the specification has been deleted. Further, Applicants submit that Figures 3 and 4 show that each groove is sized to receive a portion of on of the beams. Accordingly, Applicants respectfully submit that the drawings meet the requirements of 37 CFR 1.83(a).

For the reasons set forth above, Applicants respectfully request that the objection to the drawings under 37 CFR 1.83(a) be withdrawn.

The objection to the specification is respectfully traversed.

Figure 8 has been canceled and all references to Figure 8 in the specification has been deleted. Also, paragraph 0026 of the specification has been amended to reflect the original specification language.

For the reasons set forth above, Applicants respectfully request that the objection to the specification be withdrawn.

The rejection of Claims 1-4, 6, 13 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Anthony (U.S. Patent No. 4,127,445) in view of either Bettinger (US 3,811,237) or Naka et al. (US 4,922,670) is respectfully traversed.

Anthony describes a lower core support structure (18) for a nuclear reactor (10). The support structure includes a plurality of support beams (19 and 21) forming a grid network of support beams. Metal pads (22) and alignment pins (23) are welded to the upper surface of the support beams. Fuel assemblies (16) are supported and aligned by the pads and pins. A portion of the fuel assemblies, namely a lower end fitting (38) rests on the pads. Specifically, alignment posts (60) extend downward from a lower end plate (54), and a bottom surface of the alignment posts rest on the top surface of the pads. Notably, and as admitted by the Office Action at page 7, Anthony does not describe nor suggest at least one groove in the bottom surface of the lower end plate (54) of the fuel assembly.

Bettinger describes a raised floor panel and assembly for computer and similar installations. The panels are supported above a subfloor by a metal grid which in turn is attached

to pedestals. The grid includes longitudinal and traverse stringers 24 and 26 supported by the heads of each of the pedestals. The panels do not include at least one groove in the bottom surface. Page 7 of the Office Action suggests that there is a groove in the bottom surface of plate 20. However, Applicants submit that Figure 2 of Bettinger shows that there are no grooves in the bottom of panel 20. Particularly, Figure 2 of Bettinger clearly shows a grooveless bottom surface of panel 20 resting on stringers 24 and 26 of the metal grid. Applicants submit that Bettinger does not describe nor suggest anywhere in his specification that panels 20 include at least one groove in the bottom surface. Further, none of the Figures in the Bettinger patent show a panel that include at least one groove in its bottom surface.

Therefore, combining the teachings of Bettinger with the teachings of Anthony does not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claims 1 and 13.

Naka et al. describes a double flooring structure that is used in a floor of a computer room. Naka et al. do not describe nor suggest a removable support plate that includes at least one groove in the bottom surface, with each groove sized to receive a portion of one of the support beams. Rather, Naka et al. describe a floor panel that includes a lip (step portion 14f) around the edge of the floor panel. Applicants submit that the lip described in Naka et al. is not a groove in the bottom surface of the floor panel. Even if, *arguendo*, one considered the step

portions of Naka et al. as "grooves", these "grooves" extend around the perimeter of the floor panel and do not extend along the bottom surface at a 45 degree angle with respect to the center axis where the center axis extends through opposing sides of the panel.

Therefore, combining the teachings of Naka et al. with the teachings of Anthony does not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claims 1 and 13.

For the reasons explained above, Applicants submit that independent Claims 1 and 13 are patentable over Anthony in combination with either Bettinger or Naka et al.

Claims 2-4 and 6 depend from independent Claim 1 and Claim 15 depends from independent Claim 13. When the recitations of Claims 2-4 and 6, and Claim 15 are considered in combination with the recitations of Claims 1 and 13 respectively, Applicants respectfully submit that dependent Claims 2-4, 6, and 15 likewise are patentable over Anthony in combination with either Bettinger or Naka et al.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 1-4, 6, 13 and 15 be withdrawn.

The rejection of Claims 1-4, 6, 13 and 15 under 35 U.S.C. § 103(a) as being unpatentable over Anderson (U.S. Patent No. 4,086,133) in view of either Bettinger (US 3,811,237) or Naka et al. (US 4,922,670) is respectfully traversed.

Anderson describes a nuclear core 11 enclosed in a reactor vessel 12 of concrete. The inside of the reactor vessel includes a metal liner 13. A double walled cylindrical shroud 51 surrounds the core and is spaced apart from the liner 13. Graphite core support blocks 41 and 50 are supported from a core support floor 55 by a plurality of vertical graphite posts 52. Anderson does not describe nor suggest a plurality of support beams coupled to the core shroud. Rather, Anderson describes a plurality of support posts coupled to the floor of the pressure vessel. Applicants disagree with the suggestion at page 11 of the Office Action that the pressure vessel liner 13 is the core shroud. Anderson clearly describes at Col. 4, lines 24-26 that "A double-walled cylindrical metal shroud 51 surrounds the core and is spaced apart from the liner 13 by stud supports 47." Further, Applicants disagree with the suggestion that support posts 52 are support beams. Anderson clearly describes at Col. 4, lines 29-31 that "graphite core support blocks 41 and 50 are supported from a core support floor 55 by a plurality of vertical graphite posts 52." In addition, Anderson does not describe nor suggest, nor show in the drawings, that support blocks 41 and 50 include at least one groove extending along the bottom surface at a 45 degree angle with respect to the center axis where the center axis extends through opposing sides of the block.

Bettinger describes a raised floor panel and assembly for computer and similar installations. The panels are supported above a subfloor by a metal grid which in turn is attached to pedestals. The grid includes longitudinal and traverse stringers 24 and 26 supported by the heads of each of the pedestals. The panels do not include at least one groove in the bottom surface. Page 7 of the Office Action suggests that there is a groove in the bottom surface of plate 20. However, Applicants submit that Figure 2 of Bettinger shows that there are no grooves in

the bottom of panel 20. Particularly, Figure 2 of Bettinger clearly shows a grooveless bottom surface of panel 20 resting on stringers 24 and 26 of the metal grid. Applicants submit that Bettinger does not describe nor suggest anywhere in his specification that panels 20 include at least one groove in the bottom surface. Further, none of the Figures in the Bettinger patent show a panel that include at least one groove in its bottom surface.

Therefore, combining the teachings of Bettinger with the teachings of Anderson does not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claims 1 and 13.

Naka et al. describe a double flooring structure that is used in a floor of a computer room. Naka et al. do not describe nor suggest a removable support plate that includes at least one groove in the bottom surface, with each groove sized to receive a portion of one of the support beams. Rather, Naka et al. describe a floor panel that includes a lip (step portion 14f) around the edge of the floor panel. Applicants submit that the lip described in Naka et al. is not a groove in the bottom surface of the floor panel. Even if, *arguendo*, one considered the step portions of Naka et al. as "grooves", these "grooves" extend around the perimeter of the floor panel and do not extend along the bottom surface at a 45 degree angle with respect to the center axis where the center axis extends through opposing sides of the panel.

Therefore, combining the teachings of Naka et al. with the teachings of Anderson does not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claims 1 and 13.

For the reasons explained above, Applicants submit that independent Claims 1 and 13 are patentable over Anderson in combination with either Bettinger or Naka et al.

Claims 2-4 and 6 depend from independent Claim 1 and Claim 15 depends from independent Claim 13. When the recitations of Claims 2-4 and 6, and Claim 15 are considered in combination with the recitations of Claims 1 and 13 respectively, Applicants respectfully submit that dependent Claims 2-4, 6, and 15 likewise are patentable over Anderson in combination with either Bettinger or Naka et al.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 1-4, 6, 13 and 15 be withdrawn.

The rejection of Claims 1-4, 6-8, 10, 11, 13 and 15-18 under 35 U.S.C. § 103(a) as being unpatentable over Challberg (U.S. Patent No. 6,813,327) in view of Sodergard (U.S. Patent No. 3,650,895) and further in view of Naka et al. (U.S. Patent No. 4,922,670) is respectfully traversed.

Challberg describes a nuclear reactor core plate assembly that includes a plurality of support beams, a flat plate positioned on top of the support beams and a plurality of fuel supports

positioned on top of the flat plate and extending through the flat plate. Challberg does not describe nor suggest at least one groove in the bottom surface of the flat plate, with the at least one groove extending along the bottom surface at a 45 degree angle with respect to the center axis where the center axis extends through opposing sides of the flat plate. The core plate of Challberg does not include any grooves.

Sodergard describes exchangeable control rod guide tubes for a nuclear reactor. The guide tubes are supported by the bottom of the reactor pressure vessel and carry square support blocks at the upper end of the guide tubes. The support blocks are arranged in an edge to edge relationship to form an even bottom for the reactor core. Sodergard does not describe nor suggest support beams coupled to a core shroud, nor that the support blocks include at least one groove in the bottom surface, with each groove sized to receive a portion of one of the support beams. Further, Applicants submit that, in contrast to the suggestion at page 16 of the Office Action, Figure 3 of Sodergard does not illustrate a groove on the bottom surface of block 8. The arrows point to the gap between adjacent blocks 8 and not to a groove in the bottom surface of block 8. In fact none of Figures 1-7 of Sodergard illustrate a groove on the bottom surface of block 8. Particularly, Sodergard does not describe nor suggest at least one groove in the bottom surface of block 8, with the at least one groove extending along the bottom surface at a 45 degree angle with respect to the center axis where the center axis extends through opposing sides of block 8.

Therefore, combining the teachings of Sodergard with the teachings of Challberg does not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom



surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claims 1 and 13.

Naka et al. describe a double flooring structure that is used in a floor of a computer room. Naka et al. do not describe nor suggest a removable support plate that includes at least one groove in the bottom surface, with each groove sized to receive a portion of one of the support beams. Rather, Naka et al. describe a floor panel that includes a lip (step portion 14f) around the edge of the floor panel. Applicants submit that the lip described in Naka et al. is not a groove in the bottom surface of the floor panel. Even if, *arguendo*, one considered the step portions of Naka et al. as "grooves", these "grooves" extend around the perimeter of the floor panel and do not extend along the bottom surface at a 45 degree angle with respect to the center axis where the center axis extends through opposing sides of the panel.

Therefore, combining the teachings of Naka et al. and Sodergard with the teachings of Challberg does not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claims 1 and 13. Accordingly, Applicants submit that independent Claims 1 and 13 are patentable over Challberg in combination with Sodergard and Naka et al.

Claims 2-4, 6-8, 10, and 11 depend from independent Claim 1 and Claims 15-18 depend from independent Claim 13. When the recitations of Claims 2-4, 6-8, and 10-11, and Claims 15-18 are considered in combination with the recitations of Claims 1 and 13 respectively, Applicants respectfully submit that dependent Claims 2-4, 6-8, 10-11, and 15-18 likewise are patentable over Challberg in combination with Sodergard and Naka et al.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 1-4, 6-8, 10, 11, 13 and 15-18 be withdrawn.

The rejection of Claims 19 and 20 under 35 U.S.C. § 103(a) as being unpatentable over Challberg (U.S. Patent No. 6,813,327) in view of Sodergard (U.S. Patent No. 3,650,895), and further in view of Naka et al. (U.S. Patent No. 4,922,670), and still further in view of Dalke et al. (U.S. Patent No. 5,519,746) is respectfully traversed.

As explained above, Challberg, Sodergard, and Naka et al., alone or in combination, do not describe nor suggest a nuclear reactor as recited in Claim 13. Particularly, Challberg, Sodergard, and Naka et al., alone or in combination, do not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claim 13.

Dalke et al. is cited for teaching an inter-bundle support plate 140. Dalke et al. is not cited for and do not teach a plurality of removable support plates disposed on the plurality of

support beams, each removable support plate including a top surface, an opposing bottom surface, opposing sides, and a center axis extending through the opposing sides, and at least one groove in the bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams. As explained above, Challberg, Sodergard, and Naka et al., alone or in combination, do not describe nor suggest such a structure.

Therefore, combining the teachings of Sodergard, Naka et al., and Dalke et al. with the teachings of Challberg does not describe nor suggest "a plurality of removable support plates disposed on said plurality of support beams, each said removable support plate comprising a top surface, an opposing bottom surface, opposing sides, and a center axis extending through said opposing sides, and at least one groove in said bottom surface, each said groove extending along said bottom surface at a 45 degree angle with respect to said center axis, and sized to receive a portion of one of said support beams" as recited in independent Claim 13. Accordingly, Applicants submit that independent Claim 13 is patentable over Challberg, Sodergard, Naka et al., and Dalke et al., alone or in combination.

Claims 19 and 20 depend from independent Claim 13. When the recitations of Claims 19 and 20 are considered in combination with the recitations of Claim 13, Applicants respectfully submit that dependent Claims 19 and 20 likewise are patentable over Challberg, Sodergard, Naka et al., and Dalke et al., alone or in combination.

For the reasons set forth above, Applicants respectfully request that the Section 103(a) rejection of Claims 19 and 20 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Favorable action is respectfully solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael Tersillo". The signature is fluid and cursive, with the first name "Michael" and last name "Tersillo" clearly distinguishable.

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